T-26-1 – "Biodiversity Studies on Bayou Macon and Boeuf Wildlife Management Areas"

Abstract: The anthropogenic degradation of waterways and destruction of forests within the Lower Mississippi Alluvial Valley (LMAV) have been occurring for centuries. Two remnant forest areas within the Louisiana portion of the LMAV were the sites of the herpetofaunal surveys conducted as part of this project. Bayou Macon Wildlife Management Area (BMWMA– 2,809 ha) is a forested island in a highly fragmented, agricultural landscape located in East Carroll Parish. Fifteen 500-meter transects were randomly placed within BMWMA for the purpose of sampling the herpetofauna in relation to silvicultural practices. Surveys employing drift-fence arrays captured 372 individuals of 19 species, and visual encounter surveys (VES) yielded 179 individuals of 20 species. Additional sampling procedures included anuran call surveys, polyvinyl chloride (PVC) pipes for capturing tree frogs and aquatic trapping. Cover boards were used but were highly ineffective. The total WMA species richness was 41 species including 11 anuran, 2 salamander, 8 turtle, 4 lizard, 15 snake, and 1 crocodilian species. In relation to forestry treatments, the greatest species richness and catch-per-unit-effort were found in the uneven-aged treatments corresponding with individual selection and no treatment areas. Boeuf Wildlife Management Area (BWMA) represents a large remnant tract (20,627 ha) of forested land along the Boeuf River in Caldwell and Catahoula parishes. BWMA is highly influenced by the Boeuf River's flood cycles. In order to observe possible effects of periodic flooding on amphibians and reptiles, drift-fence surveys (DFS) and VES were conducted in frequently flooded and non-flooded areas. Additional sampling procedures included anuran call surveys, cover boards, and aquatic trapping. The total WMA species richness was 44 species including 10 anuran, 6 salamander, 8 turtle, 4 lizard, 15 snake, and 1 crocodilian species. Captures totaled 1257 individuals with both DFS and VES. The two survey techniques resulted in a similar catch-per-unit-effort for both the flooded and non-flooded areas, but a significantly lower species richness was found in the flooded area. Species-level comparisons revealed more distinct differences between areas because particular species, while present in both areas, seemed to favor areas with one or the other of the flooding regimes. Seasonal flooding at BWMA appears to significantly influence herpetofaunal distribution and composition within associated flood zones. While flooding seems to decrease herpetofaunal richness, certain species are more abundant in seasonally flooded areas.

Avian and mammal surveys were completed on the same areas. Evening Bats and Red Bats were captured on Bayou Macon WMA. Both species are common in Louisiana and Bayou Macon does not appear to be an important refuge for declining bat species. Hispid Cotton rat, Mash Rice Rat, and *Peromyscus spp.* were the most frequently trapped small mammals on Bayou Macon WMA. The most frequently observed birds on both WMAs were the Northern Cardinal, Carolina Chickadee, Tufted Titmouse, and Carolina Wren. The most frequently observed bird species of concern were the Yellow-billed Cuckoo, Prothonotary Warbler, and Northern Parula.

Abstract from: *"Herpetofaunal Surveys of Wildlife Management Areas: Bayou Macon and Boeuf"*; Final Reports (January 2008); *Carr, J.L. et al.;* University of Louisiana at Monroe; Monroe, LA; 90 pp. *with* summary of avian and mammal surveys by A. Ardoin, LDWF, June, 2008.

This grant was closed 31 January 2008. **For more information** about State Wildlife Grant T-26, or to obtain copies of interim or final reports, please contact the State Wildlife Grant Coordinator, LDWF Fur & Refuge Division.